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ABSTRACT

Just as learning a first language is sometimes compared to existence within the relatively sheltered world of the Garden of Eden, the process of learning a second language is viewed as analogous to survival after expulsion from the Garden into a relatively harsh world, in which the learner must come to a conscious understanding of form and meaning through his errors. The problem of partial attainment among second language learners has been explained generally in two ways, both interpretable through the Garden of Eden phenomenon. The dichotomy between conscious analysis on one hand and intuitive "noticing" on the other is common in research and theory on second language learning. It is suggested that these processes can be linked in second language learning by the individual's exercising his metalinguistic knowledge to test unfamiliar constructions. In this way, focus on form can be used to facilitate language learning. (MSE)

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Centre for Language and Communication Studies

The Garden of Eden and beyond: on second language processing

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The Garden of Eden and beyond: on second language processing*

by

Michael Sharwood Smith

1 Introduction

My aim in this paper is to explore, in a fairly speculative manner, the fascinating theme of consciousness and attention in second language acquisition. In the last few years there has been a surge in interest in this area. A number of experimental studies have tried to find out whether instruction that focuses the learner's attention on grammatical form can actually boost learning (see, for example, Ellis 1984, Lightbown and Spada 1990, VanPatten 1990, Doughty 1991, Fotos 1993, VanPatten and Cadierno 1993). This is, of course, to be set against a background of general scepticism in the research community about the usefulness of formal grammar teaching, especially of the traditional type.[1] In any case, if focus on form is to be avoided, then the teacher's role has to be recast as that of a manager, creating and maintaining a communicative environment where learners are concerned with producing and understanding messages rather than practising grammatical constructions. Explaining the grammar becomes a taboo.

Given recent experimentation that suggests this hard-line position to be too radical, the question then is, can focusing the learner's attention on the formal properties of language have some sort of beneficial effect after all? And, more crucially, if there *is* an ob-

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* An abbreviated version of this paper was given as a public lecture in the Centre for Language and Communication Studies, Trinity College Dublin, in Hilary term 1996.

served effect, how are we to explain this? Practising language teachers do not themselves need to know about the workings of the mind as long as they have techniques that work. Second language researchers, on the other hand, are committed to finding the answer to just this sort of question. Careful experimentation may indeed establish an effect for instruction, but interpreting this effect is extremely tricky. Establishing an effect is only part of the solution: we have to know about what it is in the human mind/brain that underlies the observed changes in learner behaviour. Analysing what is involved in noticing and remembering will have to be a major area for research (see, for example, Tomlin and Villa 1994). Part of this will be identifying the "moment of truth" when the relevant insight has been gained and we understand the mechanisms whereby this insight is established in long-term memory.

2 The Garden of Eden scenario

In our general attempt to understand how very young children accomplish the miracle of first language acquisition without grammar books or dictionaries, with little conscious understanding and, indeed, without being corrected when they deviate from the grammatical norms of the adult, we usually find ourselves developing what I like to call the Garden of Eden scenario. It goes roughly like this. The child learns its mother tongue in complete innocence, knowing nothing of error, playing with words in a learner's paradise from which teachers and all their awful paraphernalia of books and tests and tiresome exercises are banned. But there's a time limit. After all the essentials of the mother tongue system have been effortlessly mastered, somehow, the child eats, or is forced to eat, from the Tree of Knowledge. It begins to grow up into a thinking, self-conscious adult. The effect is dramatic. The scales fall from its eyes. It becomes aware of its own inadequacies. It develops a fear of making mistakes. As it emerges through the portals of what Piaget liked to call the stage of formal operations, that is, that time beginning around puberty when children become capable of abstract thinking, it is then that the metaphorical fig leaves (perhaps Dulay and Burt's "socio-affective filter"; see Dulay and Burt 1977, Krashen 1985) are hastily deployed to cover up vulnerable areas of the ego.

Suddenly, outside Paradise, language learning is no longer play. It becomes a worrying activity where shameful errors can be made. The older child and adult, with their analytic ability acquired through a combination of nurture and nature, and with their awareness of what errors are and can mean, now seek to come to a conscious understanding of what the target language is all about. Learning Italian no longer means just being with Italians and somehow picking up the way they talk without realizing how. Learning Italian means looking up words in books, again and again, worrying about word order, tense forms, puzzling over rules of grammar, despairing at the limitations of one's memory, all the things that the young child, in its innocence, never bothered about. And especially, it means trying to use Italian and getting to know when you have "got it wrong". Linguistic innocence is a thing of the past. Learners now expect to make mistakes, sometimes embarrassing ones. They also want to know when they are making mistakes and how not to make them in future. These are all concerns that are quite irrelevant to the acquirer of the mother tongue grammar, whose interest is centered on successful communication.

Outside the Garden of Eden, then, the language learner grasps at other means by which to master a new language. These means are the ones that are taught at school and applied to the learning of all types of knowledge and skill, not only languages but history, mathematics, biology and all the rest. They involve the conscious, deliberate learning of principles and trying to apply these principles in all kinds of situations. This means guessing, both in the gambling sense and in the sense of calculated guesswork, making mistakes and trying to learn from those mistakes. It especially means, as I have just suggested, relying on the correction of all aspects of language use, that is, on knowing when you are wrong and what you should have said or understood. Knowing what is incorrect, what is now commonly termed "negative evidence", is seen as vital information in the search for what *is* correct. If you can rely on being corrected, you are free to guess as creatively as you wish. However outlandish your "hypothesis" about the system you are trying to master, you can be sure that if it is the wrong one, sooner or later it will be corrected. So, correction of grammar, unnecessary in the learning of the mother tongue, becomes crucial in second language acquisition.

3 Explaining partial attainment

The most influential school of thought that came out of our attempts, in the seventies, to found a new science of second language acquisition studies, was the so-called Creative Construction (CC) model. Its proponents, notably Dulay, Burt and Krashen (1982), argued on the basis of their experiments that second language learning and first language learning were driven by the same mechanisms. This meant that they had to explain what is now called the problem of partial attainment, that is, they had to explain why second language learners do not get that guarantee of nativeness, the promise of inevitably becoming a native speaker of the target language.

What the Creative Constructionists did was to explain partial attainment in terms similar to the ones I have just used in my Garden of Eden analogy. However, they argued that it was possible to re-enter the Garden of Eden – not that they put it that way – by setting aside the grammar books, removing the stress, and imitating as much as possible the child's focus on the meaning, the message behind the language they were exposed to. Talking about the formal properties, the rules and their external manifestation was taboo.

In making this claim, they introduced what is now a standard dichotomy in the field, *focus on form* versus *focus on meaning*. As Felix was later to put it, the learner is now equipped with two learning systems that are in "competition" with each other, the one with which the first language was constructed and the new cognitive system available to the mature learner, whereby language could be mastered as if it were a game of chess whose rules had to be learned or guessed and where only the making and recognizing of errors could ensure success (see, for example, Felix 1981, 1985). Felix attributed the problem of partial attainment to the clash between these two systems, the original learning system and the one acquired at and after puberty. The solution adopted by Dulay, Burt and Krashen was to be the suppression of the newer system to give the older one an even chance of achieving the same success in L2 as it had with the mother tongue. In this way, the advocates of CC resurrected the old natural method of language learning but now equipped with a theoretical underpinning (see Krashen and Terrell 1983). If you wanted to be a successful language learner, as

successful as a first language learner, then all you had to do was be exposed to the language so that you could guess the meaning of most of what was said to you.

Research carried out by Dulay, Burt, Krashen and associates led them to suppose that the order in which the language system was acquired was pre-programmed and could not be changed. No matter how you tried, you were forced to develop a mastery of a particular construction in a particular order. It also led them to suppose that there was no point in teachers trying to follow this natural order in their own presentation of the system to the learners, since the natural order would emerge automatically by virtue of the learners' simply using the language as a means of communication. Any attempt to try and consciously work out the rules of the target language, in whatever order, was going to be at best a waste of time and at worst a dangerous diversion that would only confuse and worry the learners, thereby reducing their motivation and making their learning much less efficient.

At about the same time another school of thought was developing, in its way just as influential, but without the immediate impact that Creative Constructionism had. The quite different idea that second language learners were more or less bound to remain speakers of what Selinker has termed "interlanguage", their own special dialect of the target language, never to become identical with a native dialect, was also bound up with the Garden of Eden idea. In this scenario, the learner could not re-enter Paradise. Selinker, who subscribed to Lenneberg's critical period hypothesis (a version still, at that point, to be challenged in the literature; see discussion in Larsen-Freeman and Long 1991, pp.154ff., Singleton 1989), pointed to what he called fossilization, the cessation of learning despite repeated exposure and practice, as the most compelling evidence that the mind of the language learner had changed irrevocably from the mind that was able to attain native systems. Once you are out of Eden you are out for good.

Selinker's claims had to be based essentially on argumentation rather than on any experimental evidence since, however many persistent non-native patterns you found in systematic learner behaviour, you could always claim that these did not *have* to be permanent; you could point to experimental evidence, as Dulay, Burt and Krashen did, indicating that second language development in

some respects mimicked the subconscious development of the first language. The same or similar patterns of development seemed to show up in L2 learners. This would seem to suggest that the second language development was being driven by the same processes. In this way, fossilization was, in principle at least, never permanent.

4 Two modes of knowledge

Several interesting dichotomies arose from the research in the seventies and, in some form or other, still dominate research in the nineties. The first dichotomy has already been mentioned. It has to do with basic learning strategy. That is, it has to do with the dichotomy between the unanalytic, incidental and largely intuitive manner in which children develop mastery of their L1, and the self-conscious, analytic manner in which literate older learners attempt the same task in a second or other language. The question always is whether the adult is suffering from a disadvantage – thinking too much and inhibiting a more intuitive form of learning – or whether the mature, consciously analytic approach of the adult confers some advantage. Older learners have been observed to learn faster than younger ones, at least at intermediate stages of acquisition (Snow and Hoefnagel-Hohle 1978). Another, related question is whether the possible advantage of the more conscious style of learning is, as it were, "a consolation prize" for not ultimately being as good as the young child at intuitive acquisition. The fact of the matter is that, as in so many questions about L2 learning, we still have no absolute proof one way or the other.

The second well-established dichotomy is the *product* of these two strategies or "styles" of learning. Krashen has always claimed that consciously learning a language, and by this he meant paying attention to the structural properties of language, the endings, the word order, etc., and also the learning of formulae – rules of grammar – be they shorthand "rules of thumb" or more sophisticated ones, all this, results in a special "technical" kind of knowledge. This technical knowledge has specific properties which make it quite different from the intuitive knowledge which we pick up. It also gives older learners the illusion that they have some control over the new system by virtue of understanding how it works.

After all, if you understand the principles of bridge design, you have a real hope of being able, with practice, to design bridges. If you fully understand the rules of chess, you have the feeling that a good game of chess will one day be within your grasp. Where language learning is concerned, this promise held out by a conscious understanding of rules is a false one, said Krashen.

Theoretical linguists and lesser mortals alike fall prey to this illusion of confusing technical understanding with grammatical competence. Clearly, knowing what principle makes human beings balance and steer themselves through space has no effect on our ability to actually ride a bicycle or ski down a slope. It may give us plenty of insight into why we have fallen down. In the same way, it is claimed, this linguistic, technical knowledge derived from conscious attention to form, tells us where we have gone wrong and how, in principle, we can avoid error. It does not actually help us to avoid errors in the first place, especially when performing spontaneously. This, at least, is the claim by Krashen and his associates, and it is quite a plausible one given the fact that we all have the experience of continually making mistakes in areas where we do (consciously) "know the rule" and where we seem to have had quite a lot of practice. The converse also applies. We also get to master areas of the language without consciously knowing the rule or having had a lot of deliberate practice. Sometimes, even the best linguists have failed to come up with a satisfactory account of the grammatical areas in question, but this is no obstacle to us because we can still come to know it anyway, mysteriously. The English article system or adverbial placement rules are typical examples of areas that defy neat description but which nonetheless turn out to be learnable by children and (ultimately) by adults, not to speak of more subtle abstract knowledge which may be describable but which only linguists can elucidate. The claim that there is a strict barrier between the two kinds of knowledge, conscious, technical on the one hand and intuitive on the other, is generally known as the "non-interface" hypothesis.

It does seem that we do in fact have two minds, or two "modes of language knowledge". We can learn and know language in two different ways and both types of knowledge exist in us separately (see useful discussion in Schwartz 1993). This means we can have, for instance, a little technical knowledge of Spanish and a lot of

intuitive knowledge (just like many native speakers) or, conversely, we can have a lot of technical knowledge but only a little intuitive knowledge (like not a few theoretical linguists or, indeed, students following a traditional grammar class in a foreign language). The question "How much Spanish do you know?" can thus be answered in two different ways: a lot or a little, depending on what kind of knowledge you are talking about. And, in the same way, there are two types of answer to the question "What did you *notice* about what Miguel just said in Spanish?", depending on what you mean by "notice". In other words, there are different "modes of noticing" as well, depending on whether you are focussing on the form of the utterance or the message that it contains.

5 Noticing

We can assume that all language learning relies on learners noticing some specific aspects of utterances they hear or read. What is problematic is what exactly that "noticing" involves, and the circumstances under which successful noticing, noticing that leads to further development, may take place. To take a concrete example from the research literature, listening to a string in Spanish, for example, the learner may notice something coming after the first (what you and I, the outside observers, would call) noun phrase – the example is from VanPatten and Cadierno (1993):

PREP	NOUN PHRASE	NEW ELEMENT	VERB	NOUN PHRASE
A	Maria	*la*	llama	Juan

From the first dichotomy we may assume that there are at least two forms of noticing possible. The first is one which does not invoke consciousness. I have, in presenting you with this example, had to invoke your conscious awareness so that you can now think consciously about it. A learner, however, in the middle of listening to an exciting story in Spanish, may notice the *la*, an object pronoun, only peripherally,[2] that is, without devoting much attention to it, in the same way in which we are peripherally aware of a lot of objects around us, flashing past us, as we run down the stairs in gay abandon. Many of these objects are important for our success-

ful negotiation of the stairs: we do not want to knock into anything or fall over. Some are irrelevant. But we do not focus our attention on all these objects. We focus on, say, what we are running down the stairs for . . . away from something nasty or towards something nice. The rest is more or less a blur.

Presumably what is implied by this dichotomy between conscious analysis and the quick intuitive way of noticing is that, depending on how you notice *la*, you may come to store it in quite a different mental box. If you notice it consciously, you may begin to think about it very deliberately. You may try to analyse it, work out what it is doing there, whether it is significant or not for the meaning of the utterance, whether it has anything to do with the preposition *a*, and so on. The conscious inspection of *la* may also trigger emotional states, anxiety about your ability in Spanish, excitement about some new insight you are getting into the language, or simply total frustration at your ignorance.

To continue with the analytic kind of noticing for a moment, if this leads to some new knowledge, some idea of the role of *la*, then this will be stored as technical knowledge about Spanish. This kind of knowledge is also referred to as meta-knowledge, or more specifically, metalinguistic knowledge, to distinguish it from intuitive knowledge.[3] Later you will be able to invoke that knowledge consciously and talk about *la*, what you think it means, what it does in a Spanish sentence. You may even become more knowledgeable, again in the "meta" (technical) sense, than many native speakers of Spanish for whom this knowledge is quite unnecessary.

Whether you are right or wrong as far as the rules of native Spanish are concerned is not important here. What is important is that you have your own beliefs, your own assumptions, your own interim knowledge if you like, which you can use when thinking about Spanish grammar. Once something is noticed in this focused analytic way, then it is assimilated into the structure of the knowledge you already have, the technical knowledge, that is. You try deliberately to integrate new facts into what you already understand about grammars and more specifically the grammar of Spanish. If it were an unfamiliar piece in chess, for example, you would try and relate it to the other pieces you (thought you) knew, and you would try and work out how it affects the other pieces in various aspects of the game of chess. In other words, you would be

doing radically different things from what you would have done if you had noticed it peripherally, naïvely like a small child, and processed it at some level beneath maximal awareness.

While it is plausible that this technical knowledge does have an independent status in your mind, it is definitely more controversial to go on to say – which is what the Creative Constructionists essentially did – that highly conscious, analytic noticing, as it were, "shuts off" that part of you, that other mind, responsible for intuitive learning.

6 Process and product interface: a question of linkage

The fact of the matter is that two independent claims about language learning have been made here. Krashen's Monitor Model was, in fact, a performance model and a knowledge model. It made claims about how people process language on-line and how people convert language data from outside into knowledge inside. It said that we have two kinds of knowledge and it made claims about how each type of knowledge is created in our minds, about how the one can or cannot affect the other, and how they are used "on-line" in actual performance. So there are, in fact, two separate dimensions involved, the knowledge dimension and the process dimension. These involve a number of distinctions including:

1. *Meta/non-meta*: the sharp distinction between metalinguistic knowledge of a language (the grammar book rules and so on) on the one hand and, on the other, all the underground knowledge that you pick up without conscious analysis, the one type of knowledge being, by hypothesis, tightly sealed off from the other.
2. *Attentional processes*: the distinction between, on the one hand, conscious analytic noticing and, on the other hand, peripheral, non-focused noticing
3. *Developmental processes*: the distinction between changes in metalinguistic knowledge and changes in underlying (non-meta) knowledge

From this, logically, we can propose, at the very least, two types of linkage between the *attentional processes* and the results (or product) of these processes, *knowledge*. One involves "unique" links

and the other involves cross-linkage. The first type of linkage would be as follows: metaknowledge is developed uniquely via focused analytic noticing, whereas (underground, subliminal) knowledge which is not accessible to our consciousness, e.g., all the intricate details of L1 that we have mastered without any analytic understanding, is uniquely developed via peripheral (non-analytic) noticing:

PROCESS		PRODUCT
focused noticing	→	metalinguistic knowledge
peripheral noticing	→	underground knowledge

Figure 1
Unique linkage

The challenging line taken by the Creative Constructionists was, indeed, this unique linkage one. It implied not only that these two kinds of knowledge are quite separate but also that you can only develop intuitive knowledge by what I have here called peripheral noticing. That is why they thought that *not* thinking about rules and structure was crucial to L2 development. At the same time, the logical possibility does exist that noticing something in a very conscious analytic way might not necessarily suppress, switch off, de-activate those mechanisms for affecting your feel for the language. A skilled and experienced doctor, for example, may, while consciously analysing the symptoms presented by a patient, also be processing extra information intuitively, that is, without focusing on it. Assessing the patient's general appearance, for instance, and looking for specific well-known signs of illness learned at medical school may even facilitate a more intuitive scanning of the many other details which in turn may inform the doctor in a more subtle way about the patient's condition. Later the doctor might say, "There were no specific signs I could detect, but I had a feeling that something was not right." In this way, focused noticing, i.e. looking for well-known textbook symptoms, might also orientate the "peripheral" attentive processes (see discussion in Tomlin and Villa 1994). Focused and peripheral noticing of language might link up in a similar fashion when a learner's attention is directed to some

word or structure such that later he or she might say, "I am not quite sure what the rule is or what the precise definition of the word is, but I really feel I understand it." This indirect type of effect is presumably what is being claimed by those who show that certain types of focus on form can, despite what the Creative Construction people said, affect underlying knowledge. What is still left unclear is precisely how such linkage would work. Certainly, a more indirect, less explicit focus on form would ensure that the learner's attentional capacity is not completely gobbled up by attention to a lot of technical linguistic detail

7 Virtual input

There are other, related ways in which focused attention on form may affect our feel for language. In my 1980 article on consciousness-raising I already addressed this confusion between types of knowledge and types of processing by suggesting a "back-door" situation, what I would now like to call "virtual input creation". This was when one kind of knowledge, technical (metalinguistic) knowledge, does indirectly lead to a growth in the other kind. Suppose that I, for example, form a rough and ready rule about what I think the role of the object pronoun in Spanish is and, again, very consciously try to form an utterance on the basis of this informal rule. This utterance is, in some sense, artificially[4] created, like a linguist's example conjured up to demonstrate or test a theory. However, let us suppose I then attempt to use this so-called artificial utterance, conforming as it does to this new rule of mine, *as though it were spontaneously produced.* If I judge my resulting utterance to be successful, conveying just the meaning I intended, might not that successful communicative act come to the attention of those processors, those mechanisms in my "head" that are responsible for creating the underground knowledge base? I mean by this the knowledge I am supposed to use when chattering away happily (uncritically and unanalytically) in the language. This is an indirect route because, again, technical knowledge is not "converted" into underground knowledge via practice as suggested by various researchers in the past (following some model of skill acquisition: see McLaughlin, Rossman and McLeod 1983, Robinson and Ha 1993, Bialystok 1994). Rather, the learner consciously creates a situ-

ation which helps the learning mechanism to notice some new aspects of the target language hitherto ignored. Here, then, the link or "interface" is not between the two products, the two types of knowledge I have been talking about. The linkage is at the process level. This is illustrated in figure 2, showing the interface to be at the level of process:

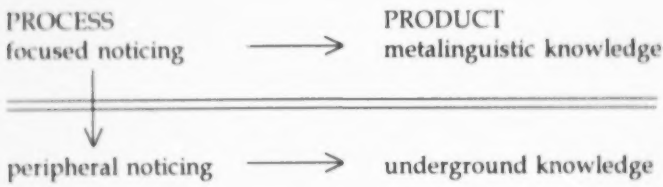

Figure 2
Cross linkage

8 The moment of truth

To recapitulate, what I am suggesting is that, via the use of metalinguistic knowledge, you are able to create virtual input. You can, in other words, create utterances of a specific type in your head which may have no further purpose than, for instance, to test out some aspect of linguistic theory. The exercise of metalinguistic knowledge does not of itself have any automatic relevance for your underlying grammar. However, if you can use these self-generated constructions in situations that are in some way meaningful to you, you may be able to make them play the same role as they would play if a native speaker had used them in your presence. That is, you can successfully bring the appropriate linguistic feature to be acquired to the attention of that part of your mind responsible for language acquisition. Your own output now becomes virtual input.

Of course, it is of great importance to understand what it is that suddenly renders this artificially created input salient. Let us assume, for argument's sake, that we are in fact ready to acquire some new aspect of the grammar. What is it, in other words, that makes the learning mechanisms sit up and take notice: what "validates" this virtual input, i.e. makes it processible by the learning

mechanisms? It has been claimed (Schmidt 1994) that the very act of experiencing the use of some "consciously known" form in a communicative situation is what triggers development. I am suggesting that the triggering factors here are not simply what makes a situation "communicative". It is important that we understand more precisely what it is about a communicative situation that has this effect we are interested in. I strongly suspect the factor is emotional in origin, or more properly, has to do with "affect".[5] If this is so, there may be quite different contexts which have the same learning effect. I once suggested to Eddie Levenston that the learning of vocabulary could be instantaneous if the right "emotional charge" was present (Levenston 1971). A highly emotive situation could replace hours of exposure and practice by making some word or structure "meaningful" for the normally fairly resistant learning mechanism. In connectionist terms, the weighting or strengthening of particular connections would not, in this case, depend solely on frequency of exposure. Why not expect the same boost with regard to learning of grammatical structure, I am now asking.

Schmidt and Frota (1986), in the diary study which records Schmidt's attempts to learn Portuguese, provide an example of what they see as conscious noticing leading to acquisition. In this case, it was not Schmidt's own working out of rules but rather what he had been taught in class. Specifically, in Week 6 he is with the help of his teacher busy learning about the imperfect tense usage in Brazilian Portuguese. He records in his diary his experience of noticing the frequent use of the imperfect for the very first time. The classroom experience had, he said, made him suddenly aware of a "new" phenomenon in Portuguese, the imperfect tense form, used in particular ways. This was a phenomenon which was actually not new at all: he must have been exposed to it frequently already *but he had hitherto never noticed it*. He says: "During the evening I managed to produce quite a few myself. Very satisfying" (Schmidt and Frota 1986, p.279).

Let us, for the moment, suppose that Schmidt's Portuguese really was affected by this experience (and not just his technical knowledge of Portuguese). We can only speculate on the basis of his diary studies what the actual triggering event would have been. When, precisely, did the penny drop? Was the change in his Portuguese a direct and immediate response to the earlier insight pro-

vided by the teacher? This would mean his use of it later was merely a satisfying exercise of something he *already knew*. And, if it was the successful act of communication itself that brought about the change, which precise aspect of that exercise was it? Was it the act of *understanding* his friend the native speaker or was it, indeed, those later attempts to consciously produce examples of the imperfect, i.e. the putting into practice what he had "learned"? Or, finally, following my notion of "emotional charging", was it really the emotional reaction he had to what he saw as successful communication that ensured the advance in his Portuguese development?

The significance of emotion in learning is as yet poorly understood. Schmidt and Frota see the moment of truth as the moment at which the form is *consciously* noticed in real live communication (1986, p.311). In this particular example, the noticing was the the result of prior formal instruction where the teacher had drawn Schmidt's attention to the usage of the imperfect. At this stage of research, there is no reason to take this interpretation as the correct one. The fact is that without a better theory of language processing, we simply do not know yet. In particular, we do not know why communicative use of a form, i.e. either noticing its use or actually trying it out yourself, would trigger a change in your knowledge of the language. It may well be the fact that the form is made meaningful in a communicative context and gets as it were an emotional charge (an "affective licence") that triggers the change in the learner's system. As I have just suggested, this leaves open the possibility that the same effect may be brought about artificially, that is, not necessarily via spontaneous communication.

9 Conclusion

In suggesting the possibility that focus on form can facilitate acquisition, there is always the inevitable cautionary statement that needs to be made. All of this (informed) speculation is, of course, to be prefaced with "other things being equal". I think everyone now has some notion of developmental stages in language learning whereby a learner is only psychologically ready to learn some feature of the L2 when certain preliminary stages have been passed through. Presumably I will not be able to grasp the significance of

the Spanish object pronoun in the example mentioned earlier unless certain prior learning has taken place. And, by the same token, Schmidt could not have picked up the Portuguese imperfect at just *any* stage in his mastery of that language. In some cases, there may be a fixed sequence of stages which neither the learner nor the teacher can effect. In other cases, there may be other factors that render the learner insensitive to the new form. Generative linguists, especially when talking about first language acquisition,[6] speak about "primary linguistic data", that is, the information in the language that the child is exposed to that is crucial for language development to take place. It is also called "positive evidence". Encountering examples, in the natural linguistic input, of the objective pronoun *la* in the Spanish example constitutes primary linguistic data for the acquisition of (say) word order in Spanish. Here, objects can clearly precede subjects in a way that is not possible in English. You cannot say "the bone ate the dog" or rather, more literally, "to the bone it ate the dog". *Metalinguistic* evidence[7] such as "In Spanish, the order *object + verb + subject* is permitted in active sentences" is not primary linguistic data and cannot, by hypothesis, ever be transformed into (or "redescribed"[8] as) positive evidence to the learner. In other words, we can still hold on to the idea that there is no direct interface between the two types of knowledge we have been talking about. On the other hand, it is a very different matter to say that metalinguistic activity such as directing the learner's attention to word order or object pronouns in some way cannot promote scanning of the crucial primary linguistic data that is necessary for further development to take place. I have here speculated a little on the nature of this different type of interface. More experimental research should show us if there is any substance to the idea that the Garden of Eden may still be re-entered, though a back door.

Notes

1 True, there are some who espouse a general skills model whereby, via regular practice/exposure, learning proceeds from slow deliberate processes to faster, automatic ones (cf. Robinson and Ha 1993). But so much evidence suggests this model to be wrong or at least insufficient. Learning does not happen in this straightforward way, at least a goodly proportion of *language* learning does not.

2 I am here attempting to honour Schmidt's recommendation that we talk about focal and peripheral noticing rather than use the terms conscious and subconscious, even though his general ban on extending terminology is surely too limiting (Schmidt 1994).

3 Schwartz (1993) uses the term LLK (learned linguistic knowledge), linking it up with Krashen's well-known learned/acquired distinction, where conscious "learning" is contrasted with subconscious "acquisition" or, in Schwartz's Chomskyan terminology, "growth".

4 Strictly speaking, this is nonsense: metalinguistic behaviour is, of course, just as "natural" as non-metalinguistic behaviour. It just has a different epistemological status.

5 Jackendoff (1987) in his discussion of a computational model of mind develops a theory of "affect" and "affect monitors" (pp. 303ff.) to account for the way the elements of our experience are "felt", distinguishing between, for example "images" and "percepts", things we feel to be hallucinations and things we feel to be "real". Presumably input that is processed purely for communication but is not treated as data for acquisition has a different affect attributed to it. When input becomes data, a different affect is assigned to that information, as when the experience of something "real" coming through the window is suddenly reinterpreted as a hallucination.

6 Though the form is also in use in second language acquisition.

7 Schwartz (1993) calls this explicit positive evidence.

8 Karmiloff Smith (1992).

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